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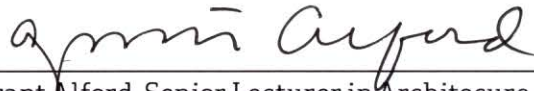
**Per-Plexus:**

Engaging Slippages of Socio-Spatial Awareness

A THESIS SUBMITTED  
IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE

Master of Architecture

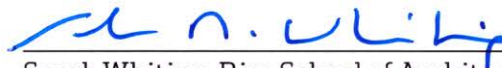
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## **ABSTRACT**

### **Per-Plexus:**

Engaging Slippages of Socio-Spatial Awareness

by  
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This thesis investigates the role of architecture upon the perception of its subject. It is particularly concerned with the perceptual “flickers” that result when the subject is confronted with simultaneous and opposed socio-spatial phenomena. It asserts that when the subject is confronted with such phenomena, a single state flickers to the foreground while all others recede to the background of perception, causing the subject not only to recontextualize socio-spatial awareness in light of the foregrounded state, but also to labor in order to totalize the sum of all states. Ultimately, this thesis is interested in activating the subject and creating an experience that is not defined physically but rather perceptually, not accessible through instant apprehension but rather through labored comprehension. It tests these assertions and advances these interests by speculating on a living center that foregrounds the impact of geometry and form on the subject’s perception of private and public.





## ACKNOWLEDGEMENTS

First and foremost, I would like to thank Grant Alford, my steadfast Thesis Director, who always believed in my thesis and who always challenged me to make it more clear, more concise, more bold. Without his guidance, the vague questions that foreshadowed this thesis would have never been given semantic or architectural form.

I would also like to thank the entire Rice School of Architecture faculty, not only for their direct input throughout the formal thesis process, but also for all the questions they provoked in studios, seminars, and workshops.

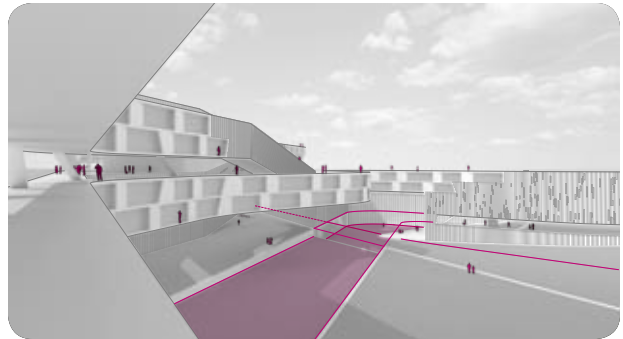
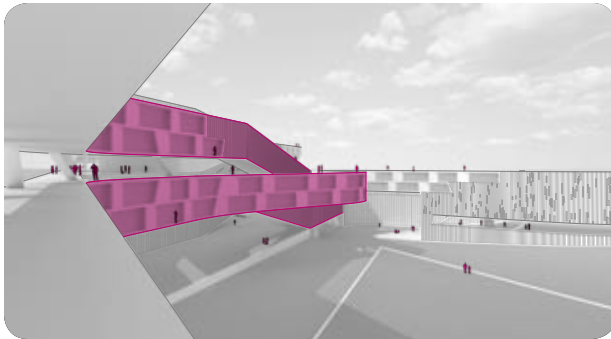
My peers played a similarly important role, answering questions, and asking them. A dedicated team was there for me when I needed them most, helping me bring my thesis to life as the final deadline approached. I would specifically like to thank: Jon Siani, Aaron Bush, Michael Matthews, Serge Zotov, Nicolas Weiss, Bo Park, Jesse Yang, Sam Tannenbaum, and Will Crothers.

Finally, I would like to thank Sandy for her unending support. Her willingness to celebrate the good days, support the bad days, and forgive the lost days made my success possible and will never be forgotten.



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*left:* as the upper and lower bands dive down, a third delaminates to bridge between levels, resulting in continuous circulation and simultaneous but opposed continuities.

*right:* the ground is pulled up and pressed down to define zones that respond to but are independent from the living center's geometry.

RENDERING AT SOUTHEAST

## INTRODUCTION

The Latin *perplexus*, the source of the English word *perplex*, is the conjunction of *per-*, meaning “thoroughly”, and *-plexus*, meaning “involved”. This thesis foregrounds the role of the active, thoroughly involved subject. Plexus also refers to an interweaving or a network, and in the context of this thesis, alludes to the importance of architectural form on the perception of the subject.

Specifically, this thesis asserts that the contemporary condensation of the once binary conditions of private and public necessitates consideration of a third realm, the *publix*. It interrogates the socio-spatial awareness through which the subject defines his relationship to the public and the *publix*, and it explores how slippages of boundary and scale can create flickering recontextualizations of these relationships. Ultimately, and by activating the subject, it seeks to create an experience that is not defined physically but rather perceptually, not accessible through instant apprehension but rather through labored comprehension.



PRIVATE



PUBLIC

## PRIVATE-PUBLIC-PUBLIX

Traditionally, private and public have been defined as mutually exclusive realms, where the private relates to the individual and the public relates to the collective (see diagrams, *left*, where the grey zone refers to space in the most generic sense). Architecture is frequently defined in these terms, its space being assigned to one realm or the other. The key distinction between the two is not location, visibility, scale, boundary, etc., but rather the extent to which the individual controls his surroundings: in private, complete control; in public, complete lack of control.

Contemporary culture has witnessed a condensation of these two realms. Consider the advent of suburbanization, gated communities, commuter culture, tunnel systems, etc., all of which enable the individual to exist in a “public” that he narrowly defines and carefully controls. A perfect case study of this phenomenon is the network of underground tunnels, shopping malls, and food courts that connect corporate high-rise buildings across the downtown of Houston, Texas. Here, one finds all the traditional hallmarks of the public realm, not limited to monumental open spaces, throngs of people and activity, and access to various civic services. Despite all this, its users are overwhelmingly homogeneous and choose the tunnels over the streets precisely for their homogeneity. With this new level of control, what might be called public is actually more and more an outward expansion of the private realm. Just as the private realm fosters interaction between the homogeneous, so too does this new public, and it should therefore be defined as a collective of sameness. (see diagram, *next page*).



CONTEMPORARY PUBLIC

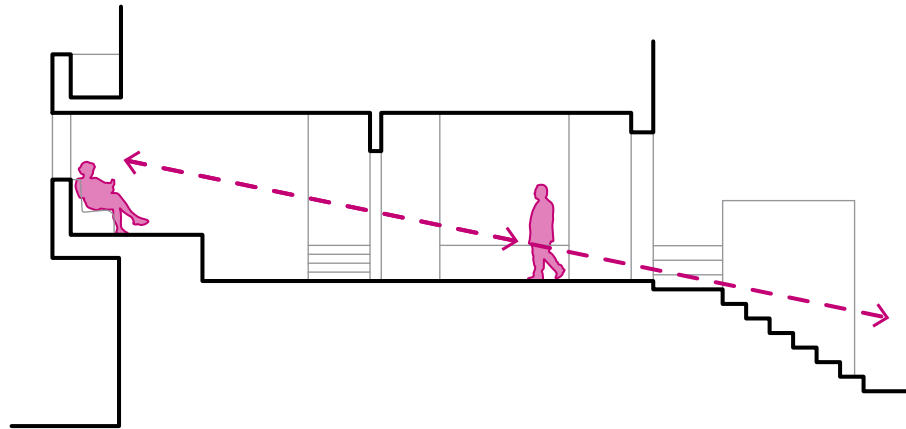


PUBLIX



As a foil to this new public, this thesis introduces the publix, a realm defined as a collective of difference. Here, spatial and social awareness overlap as the individual situates himself simultaneously between and across multiple constituencies (see diagram, *bottom left*). The intent is not to abolish the public or claim that it is inferior to the publix, but instead to situate public and publix realms together, so the individual recognizes that both exist, in balance, so that the individual finds the two constantly in flux, constantly flickering.

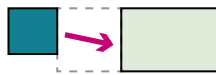
mostprivate ←————→ mostpublic



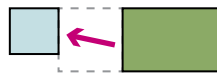
private + public



private > public



private < public



private <=> public



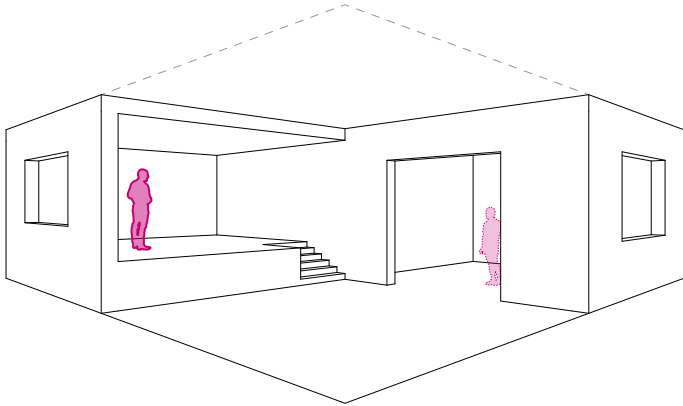
VILLA MOLLER, ADOLF LOOS, 1926

## FLICKERS!

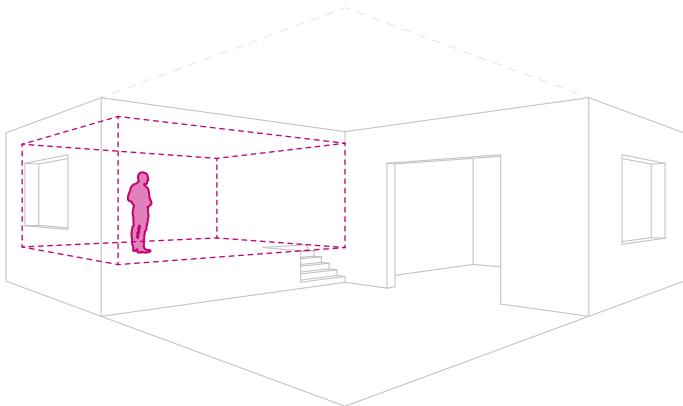
This thesis asserts that when the individual subject is confronted with a multiplicity of opposing realms (or boundaries or scales), a single state flickers to the foreground while all other recede to the background of perception. With each flicker, the subject must not only recontextualize social and spatial awareness in light of the foregrounded state, but must also labor to totalize the sum of all states.

In order to define flicker in architectural terms, several precedents should be considered. The first is the raumplan of Adolf Loos, a spatial strategy developed as an alternative to the International Style. The raumplan situates rooms in three-dimensional space, resulting in a highly articulated building section where boundaries between rooms are defined by shifts in elevation and scale.

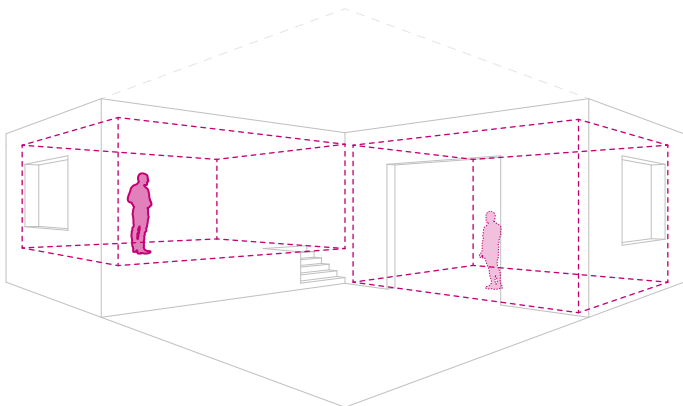
The Villa Moller, built by Loos in Vienna in 1926, exemplifies the raumplan. At the main level, the most private sitting room is situated adjacent to the most public living room (see diagram, *left*). Is the sitting room just a private space near a public space? Is the living room just a public space near a private space? Are each autonomous, or are both part of a spatial continuity? All states exist, but the subject's perceptual awareness of each flickers.



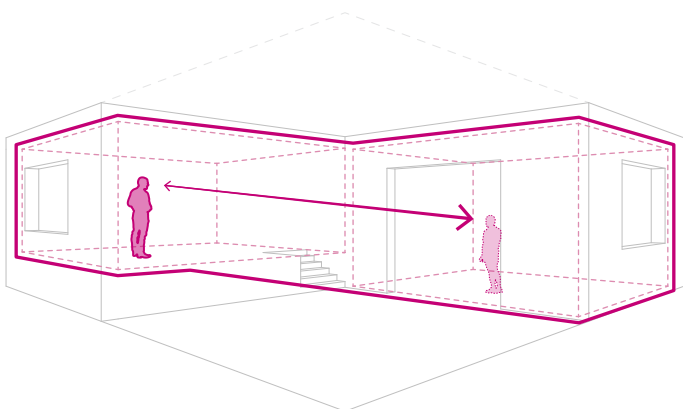
system of spaces



individual occupies space



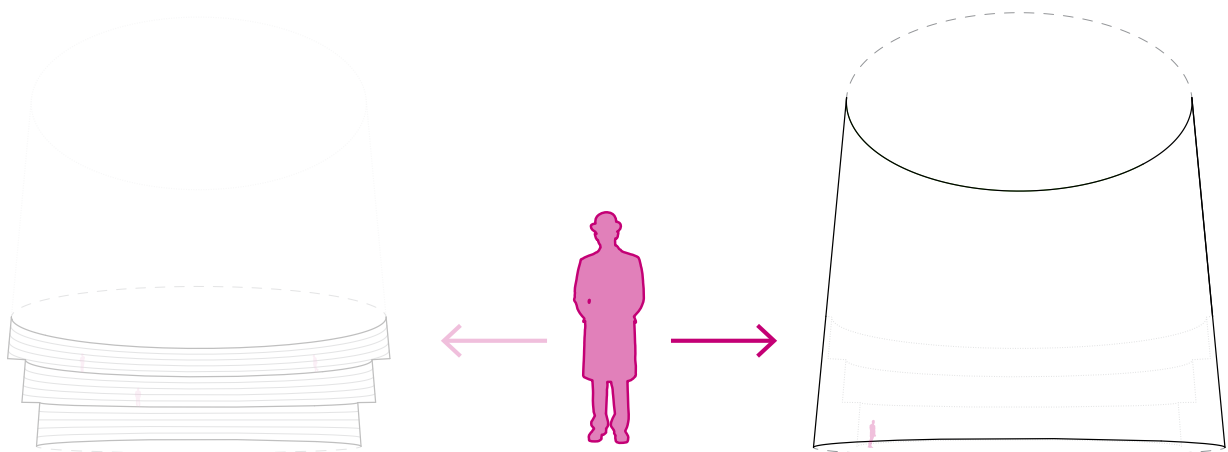
collective occupies spaces



space flickers!

LOOSIAN RAUMPLAN

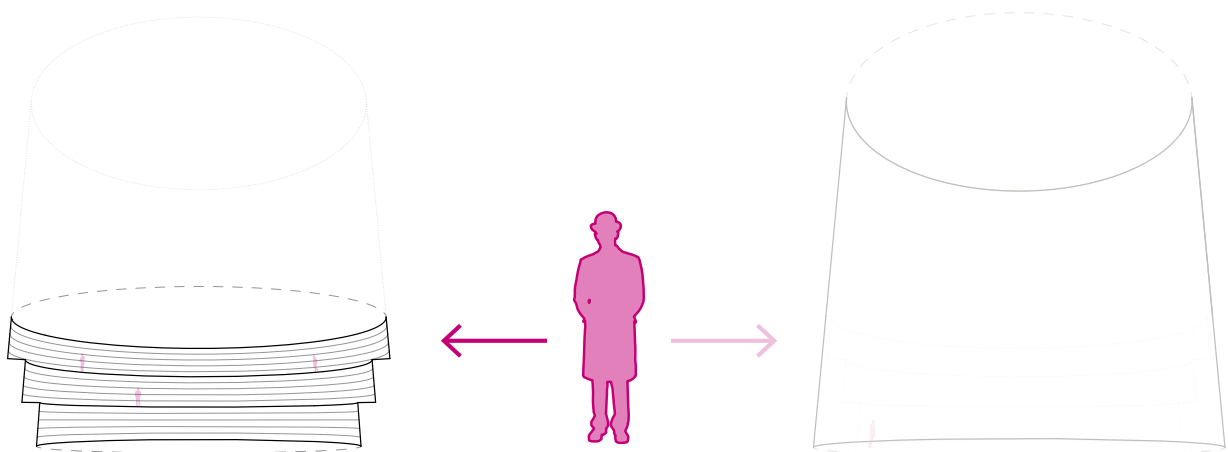
The influence of these techniques on subject's perception is of particular importance (see diagram series, *left*). The sectional articulation of space allows a single subject to situate himself in a perceptually bounded space. Similarly, multiple subjects can each situate themselves in their own perceptually bounded space. The key moment occurs upon the subjects' awareness of another. This act divorces the subject's physical and perceptual situations: while physically static, the subject can perceptually move between and across space to situate themselves in the shoes of another. Because of the immediacy of perception, this movement is instantaneous, but nonetheless forces the subject to recontextualize socio-spatial awareness.



STOCKHOLM PUBLIC LIBRARY, ERIK GUNNAR ASPLUND, 1928

Loos's raumplan achieves flicker through an active architecture of carefully constructed movement, boundary, and view; in contrast, the Stockholm Public Library, built in 1928 by Erik Gunnar Asplund, achieves flicker by means of a more latent architectural device. Of particular importance is the central, cylindrical lending hall. Here, the subject is initially confronted with, and perhaps overwhelmed by, the monumental scale of the space (see image and diagram, *left*). However, the subject soon becomes aware of the band of books, which defines a human-scale zone that stands against the monumental scale of the space as a whole (see image and diagram, *next page*).

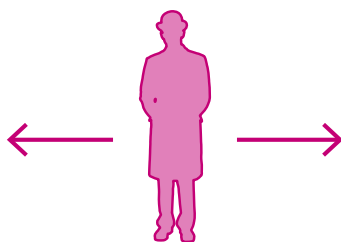




STOCKHOLM PUBLIC LIBRARY, ERIK GUNNAR ASPLUND, 1928



This thesis argues that the subject is ultimately unable to reconcile these opposed states, and that instead a single state flickers to the foreground of perception while the other recedes to the background. With each flicker, the subject finds himself suddenly in a different space to which he has a different relationship. The subject may in one instant perceive the monumental scale and the collective of activity within it, only in the next instant to perceive the human scale devoid of anything but himself and the books. While only one perception is foregrounded, all others exist in the background; through this tension between immediate perception and prior perception[s], the subject must labor to conceptually totalize their sum.



THE EMPIRE OF LIGHT, RENÉ MAGRITTE, 1954

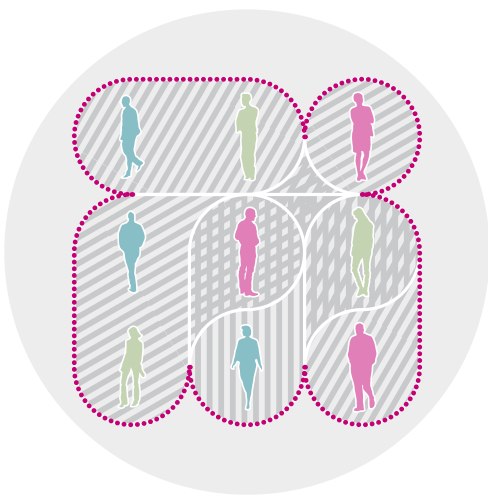
The final and perhaps most succinct precedent is René Magritte's *Empire of Light* from 1954 (see painting and diagram, *left*). Here, a surreal scene is presented with utter clarity, as the subject is immediately confronted with two opposing states: day and night. Just as in Asplund, the subject cannot reconcile the multiple states together. Instead, one flickers to the foreground while the other recedes to the background of perception. The constant flux — constant flicker — of these opposing states engage and activate the subject.



housing



community program



multiple and overlapping constituencies

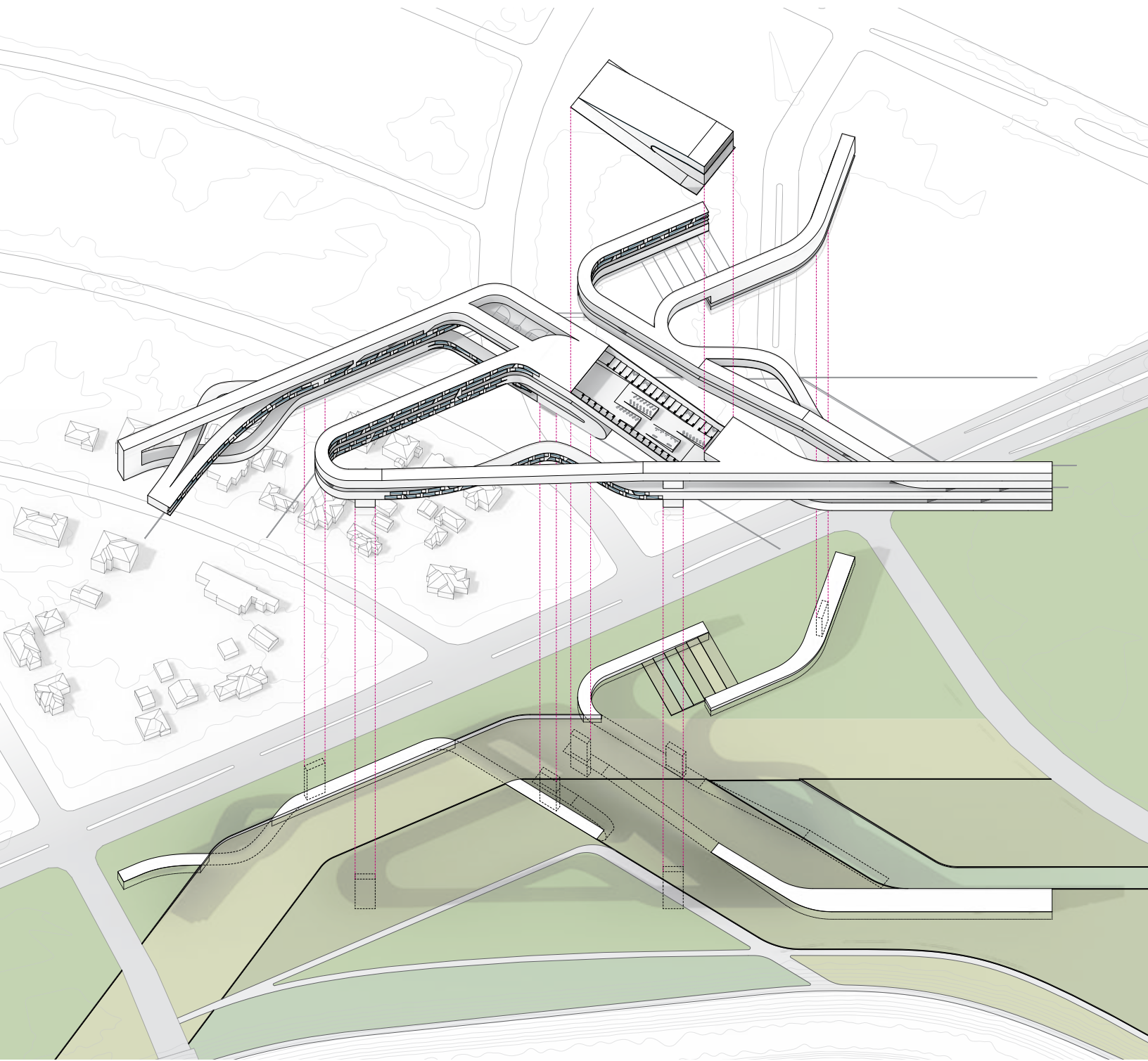
TRANSITIONAL LIVING CENTER FOR RECENT IMMIGRANTS

## ENGAGING THE SPECTRUM

This thesis leverages the potential of perceptual flickers to engage the full breadth of the private-public-public spectrum, and proposes a speculative architectural intervention to test these potentials. Housing serves as the programmatic backbone for this investigation, while specific criteria are laid out to engage each realm:

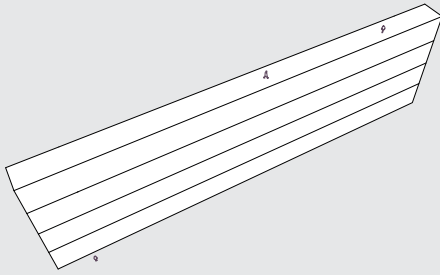
- a bias toward short-term housing units, which provide the potential for shifting resident populations.
- additional community programs, like classrooms, counseling, a small theater and library, that foreground the public as a collective of sameness.
- and finally, multiple and overlapping constituencies that foreground the public as a collective of difference.

In order to heighten the confluence of difference, a transitional living center for recent immigrants serves as the specific program and provides housing for people from different nations, speaking different languages, practicing different religions, with different levels of education, who will not only live together but will live between and across multiple constituencies. This thesis does not in any way seek to address the politics of immigrant housing, but simply leverages its potential to densify difference.



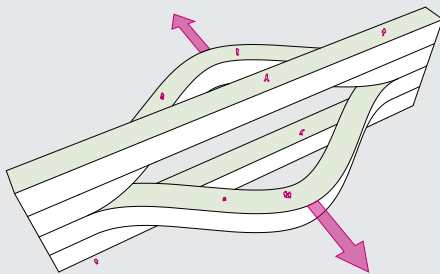
EXPLODED AXONOMETRIC

This thesis proposes a transitional living center for recent immigrants sited in Houston, Texas on a fourteen acre site along Bray's Bayou at the corner of Main and Greenbriar streets. Although the site governed the bounds of the proposal and the context provided a backdrop for certain design decisions, geographic specificity was ultimately not important, as the same investigations could have been carried out on any site, in any city. The primary ambition of this thesis was to explore the role of geometry and form on the social and spatial awareness of the subject, drawing techniques from the precedents described above and deploying them in different contexts of scale and program.



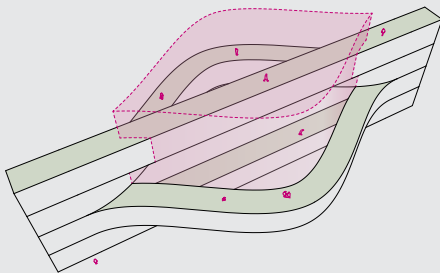
### linear housing block

the thinness of the linear housing block typology serves as the base for local formal operations.



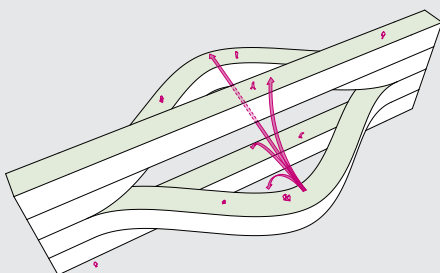
### delaminate

bands are pulled apart, increasing occupiable surface atop each band, and opening a loosely defined void.



### void

voids act as micro-community centers and flicker in the subject's perception between bounded and unbounded space.



### view

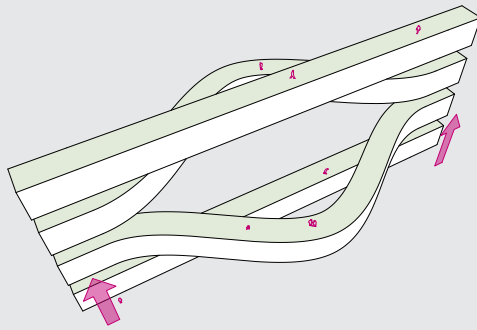
views across each void connect different micro-communities and allow the subject to perceptually move across the void.

## LOCAL STRATEGIES



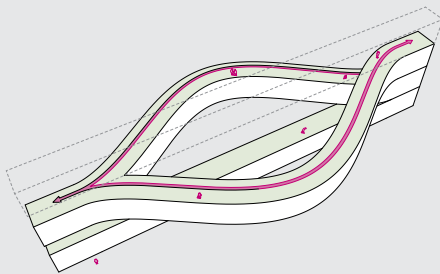
A host of formal strategies emerged, including strategies at the scales of a single apartment unit, the scale of the entire site, and the intermediate scale in between. All these strategies operate on the single-loaded linear housing block, which is embedded with a thinness that promotes externality and foregrounds the activity of its occupants (SANAA's Gifu Kitagata Apartments, built in 2000 in Gifu, Japan, exemplifies this typology).

In this thesis, housing and other program is situated linearly in enclosed horizontal bands that strategically delaminate to create implied voids that operate both as courtyard (active void) and atrium (inactive void). In addition to their spatial dimension, these voids carry a social dimension as well: they are the moments of difference in an otherwise linear system and act as the outdoor space around which residents begin to form micro-communities. Within these voids, the subject's perception flickers between bounded and unbounded space, between local micro-community and the macro-community beyond. In one sense the implied void (or micro-community center) is purely public as defined above: it facilitates the micro-community's collective of sameness. But it is simultaneously most exposed to the public, as its physical situation maximizes views to and between other micro-community centers. It is here that socio-spatial flickers are most acute as the subject finds himself simultaneously in the public and public realms.



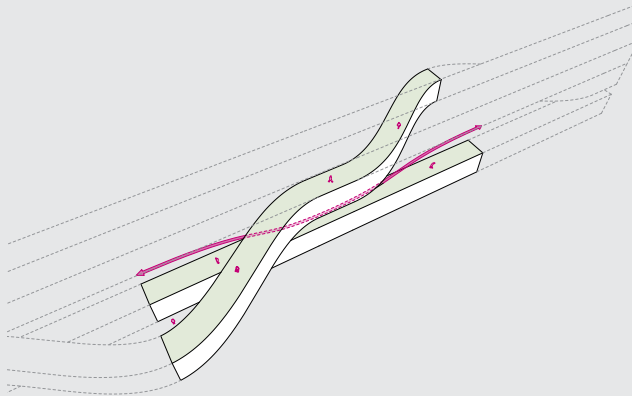
### explode

bands are pulled apart vertically, allowing for circulation and social interaction to occur between bands.



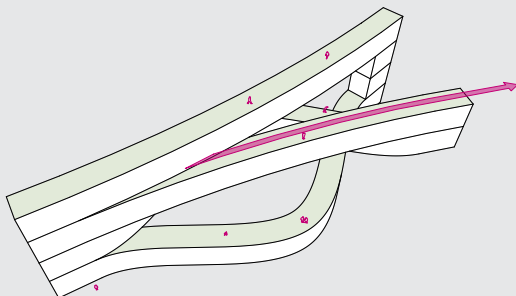
### weave

bands bridge between levels, facilitating continuous circulation and blurring physical distinctions between micro-communities.



### pinch

vertical space is compressed to create thresholds between voids.

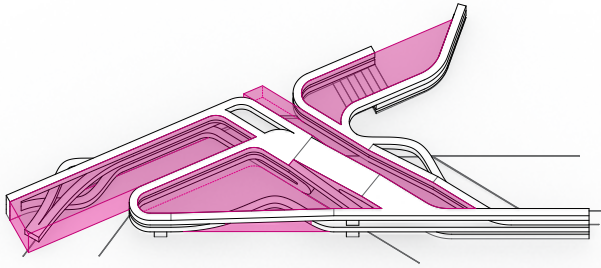


### peek

bands project into open space, at once part of and discrete from the linear continuity of the system.

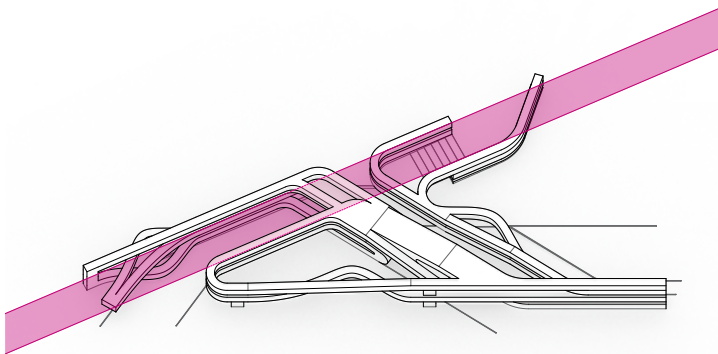
## LOCAL STRATEGIES

In addition to being delaminated, the bands are pulled apart vertically. No longer is program single-loaded but rather top- and bottom-loaded. This allows all circulation to occur between bands of program, amplifying and freeing the potential for social interaction that is not limited to a single horizontal band. More importantly, the circulation spaces create visually free horizontal datums that allow the subject to perceive the overall figuration of the building's form and read the geometries that result in flickers between the proximate and remote.



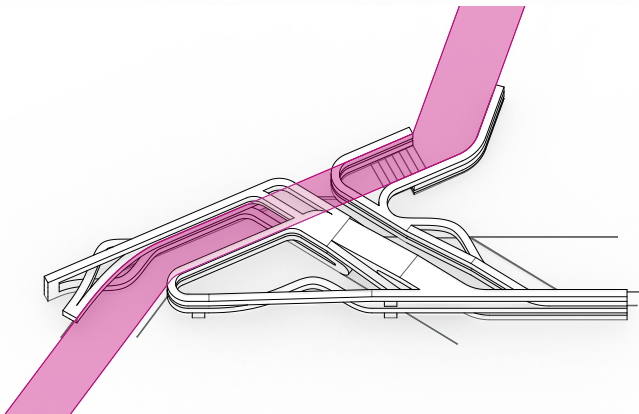
### zones

large zones, bounded both physically and perceptually, are the largest subunit of the living center.



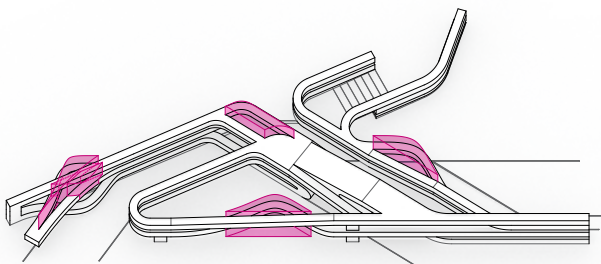
### bands

geometries continue between and across zones, creating a perceptual continuity where no physical continuity exists.



### throws

bands are thrown into the surrounding urban fabric, situating the living center as a micro-community within the city.

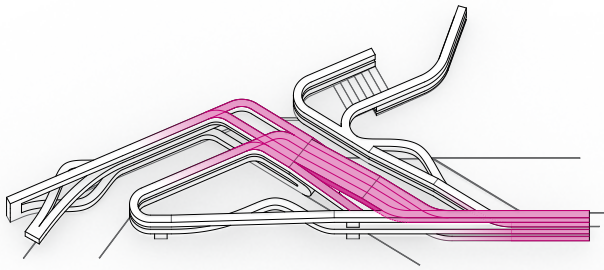


### voids

these act as micro-community centers that are at once bounded and unbounded.

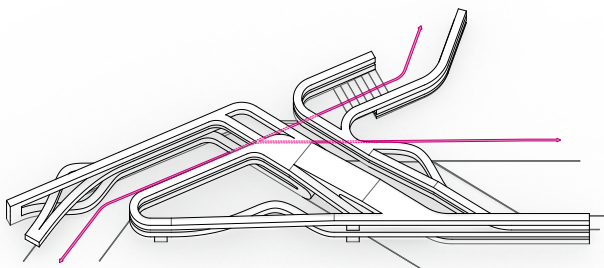
## SITE STRATEGIES

The living center's geometry is defined by a variety of strategies. Implied voids, whose local-scale characteristics are described above, are placed throughout the site. The slender bands of program bundle in the middle of the site to create space for the largest program. It is here that an indoor recreation center is placed and here again that flicker begins to appear, this time by building specifically on phenomena described above in Asplund's Library. The library confronted its subjects with both the human and monumental scale; in the living center, in addition to these two scales, the legibility of the common horizontal band within the much larger volume allows the subject to perceive what should be termed the "figural" scale, a scale which relates not to the immediate space, but to the overall figuration of the center.



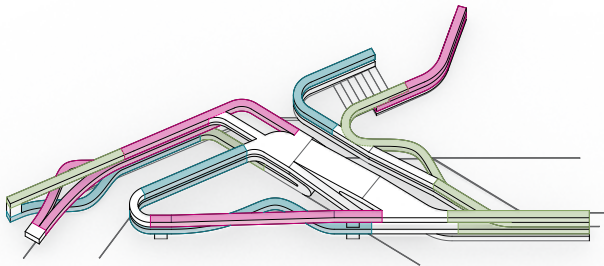
### bundles

bands are bundled to create larger space while maintaining legibility of their common dimension.



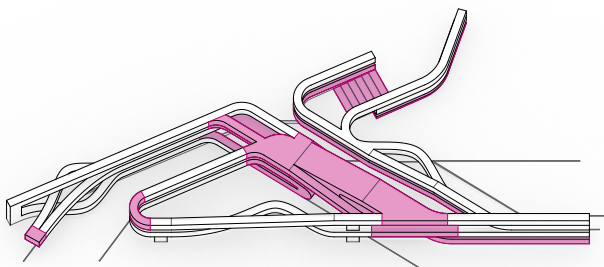
### flows

the ground is pressed down below the building, allowing the subject to move between bands, zones, voids, etc.



### clusters

living units are clustered by common access, creating one set of micro-communities.

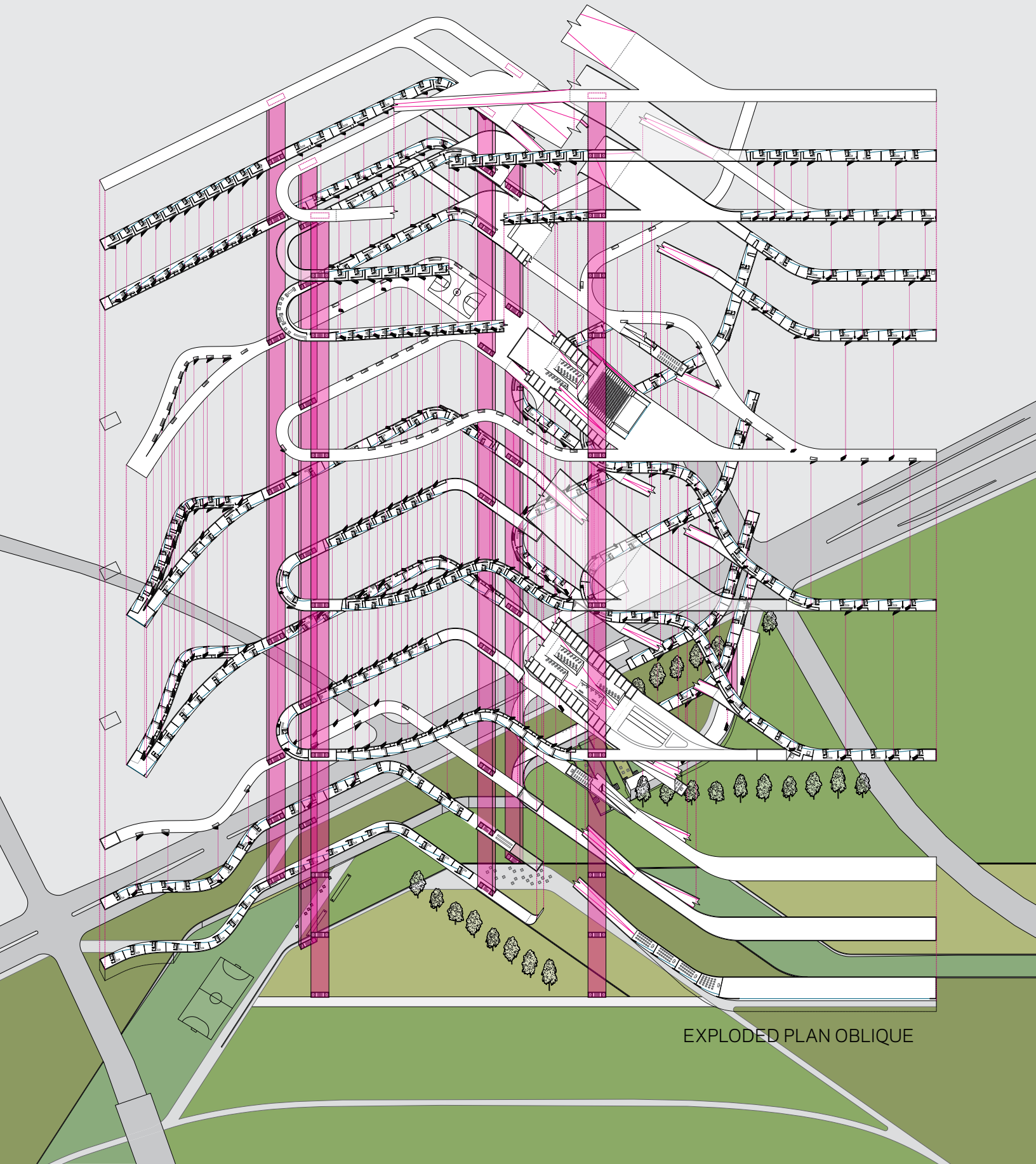


### collectives

programmed collective spaces (i.e. recreation center, cafe, theater, etc.) are placed throughout the site, creating a different set of micro-communities.

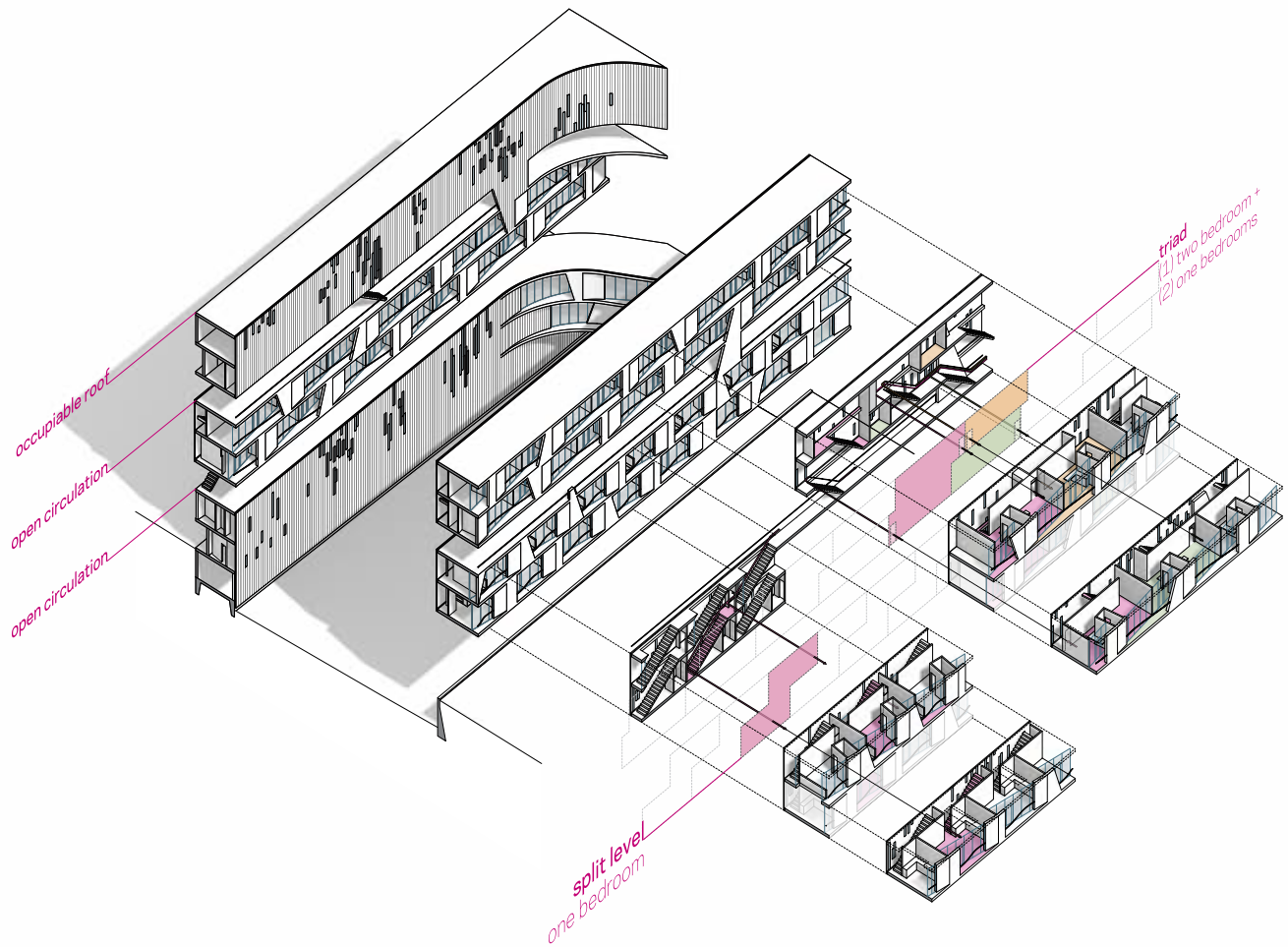
## SITE STRATEGIES

This figuration engulfs the entire site. Branches and overlapping networks facilitate the simultaneous continuity and discontinuity of space and form. The sinuous arrangement of the programmatic bands creates larger zones which, like the smaller implied voids, are at once discontinuous from the system and a product of its continuity. Visual continuities can be traced across zones, allowing the subject's socio-spatial perception to flicker within and beyond the bounds of the zone. The continuities are ultimately thrown into the surrounding fabric, less in the interest of contextualism and more in the interest of situating the entire center as a micro-community within the greater urban fabric. Through all these operations, the subject must constantly recontextualize his spatial awareness: in one instant, he might relate to an immediate zone, an adjacent zone, or a continuity. Spaces of living and gathering naturally couple with these spatial configurations; now, not only does each flicker have a spatial dimension, but a social one as well.

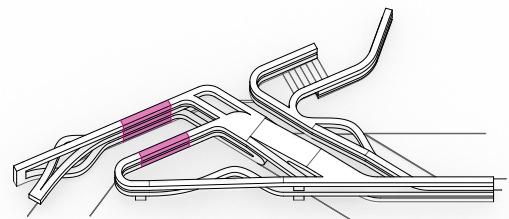


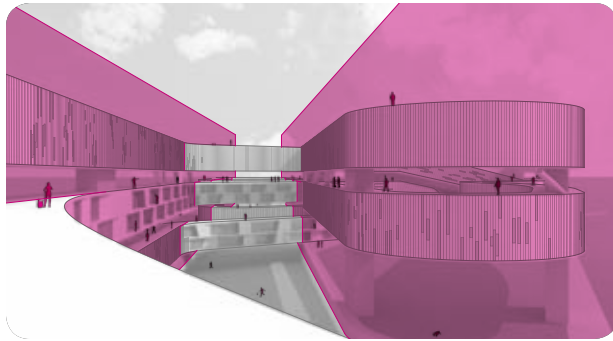
EXPLODED PLAN OBLIQUE



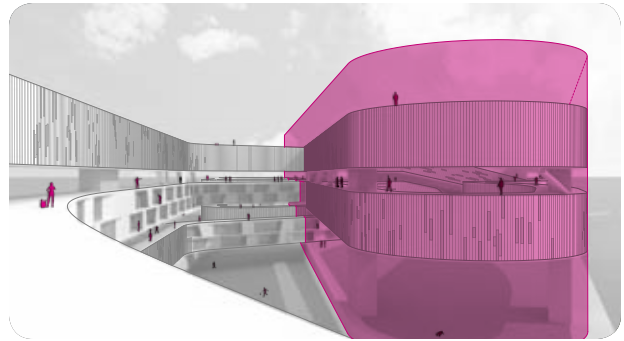


EXPLODED SECTION



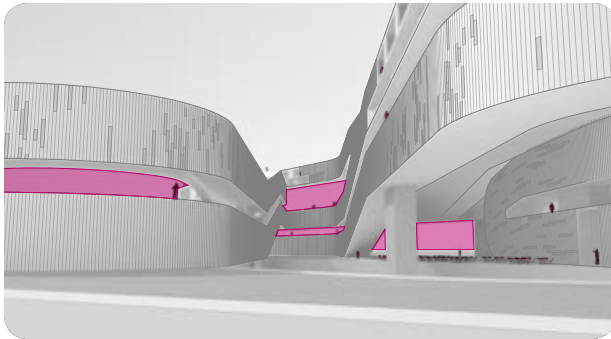
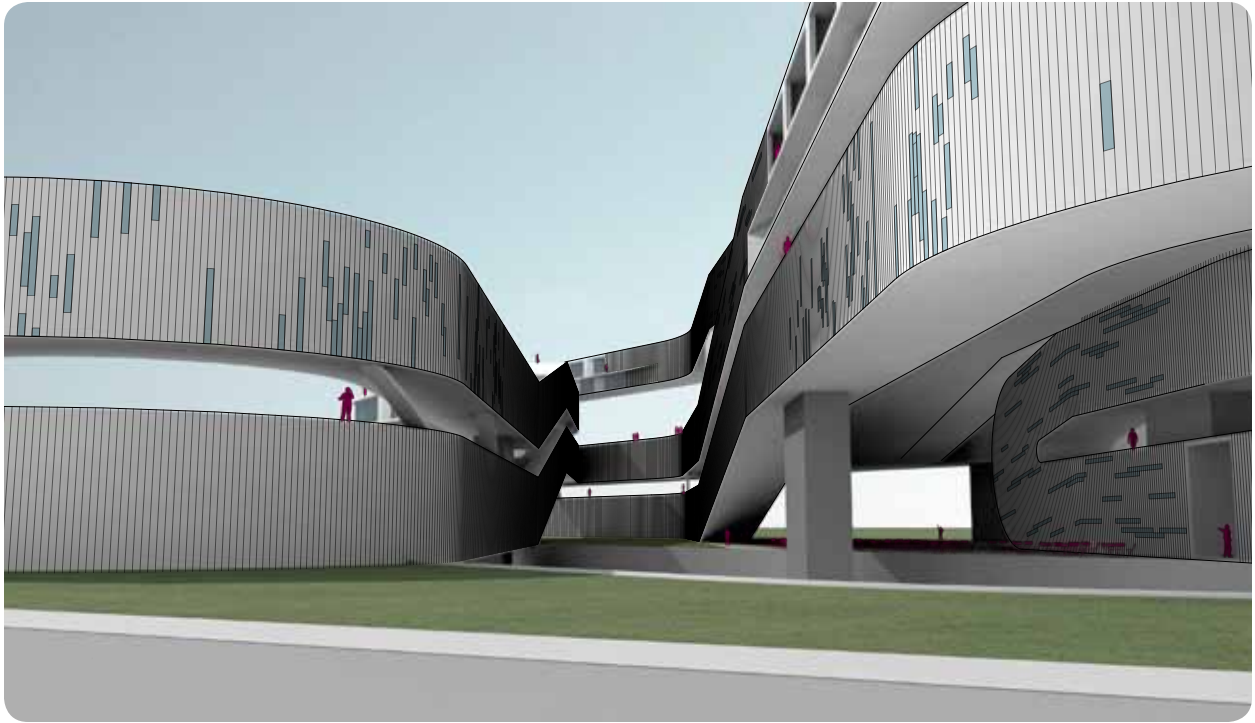


*left:* standing atop the peek at the western edge of the site, the subject occupies a band that perceptually connects distinct zones, both in the living center and on the ground.

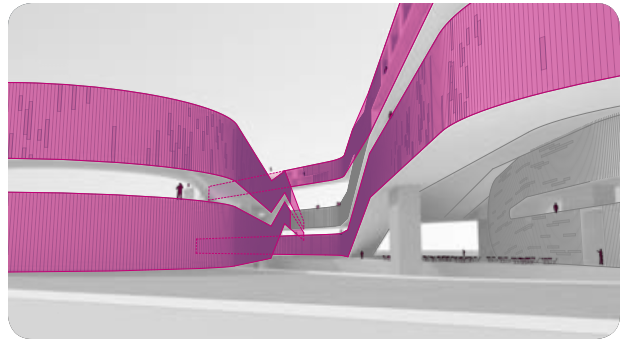


*right:* as a result of the filleted corner, the subject perceives the highlighted bands both as discrete object and as continuous with the overall geometry.

RENDERING AT WESTERN PEEK

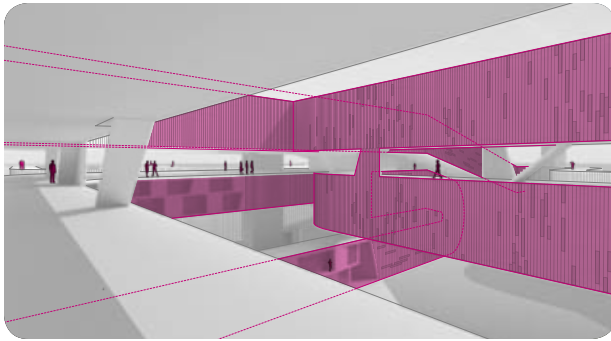
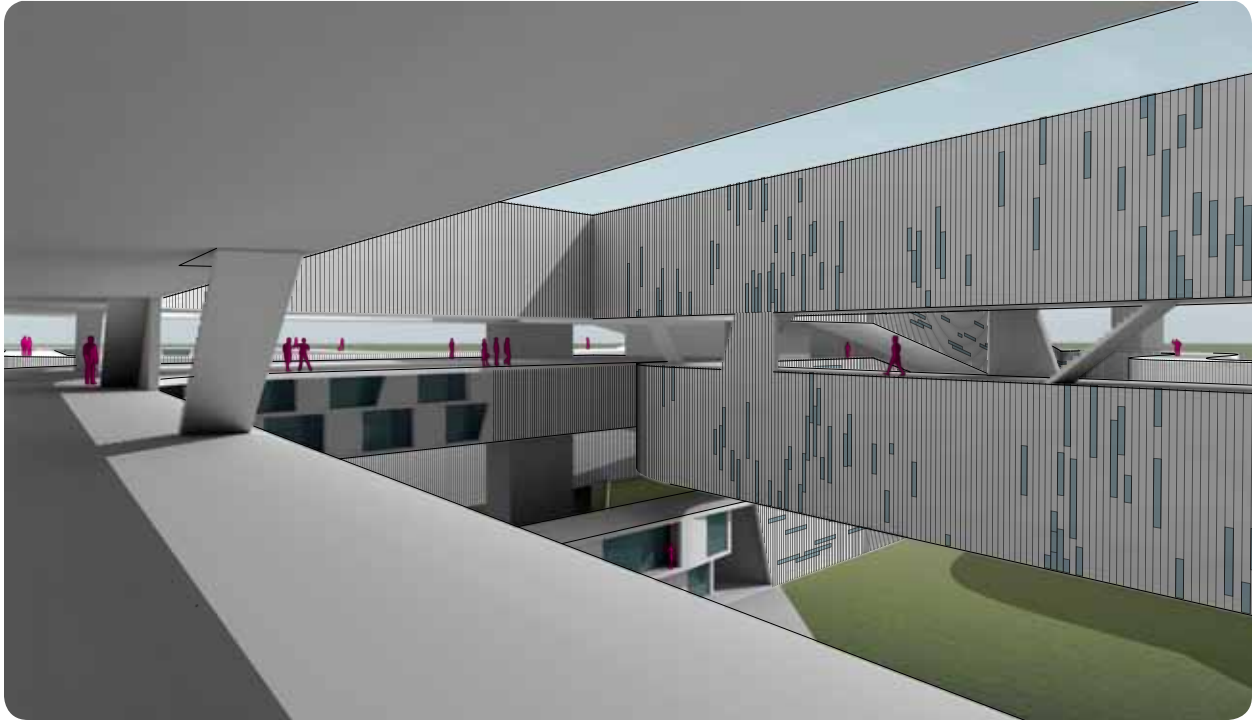


*left:* the open space between layers speaks to the thinness and externality of the living center, and places circulation and interaction in the view of other subjects.



*right:* despite their physical intersection, the highlighted bands are perceptually continuous, resulting in flickers between the purely physical and the purely perceptual.

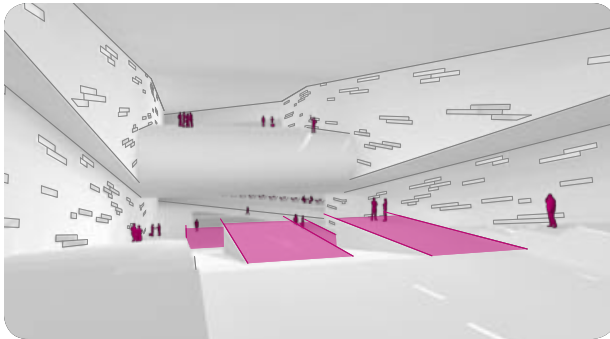
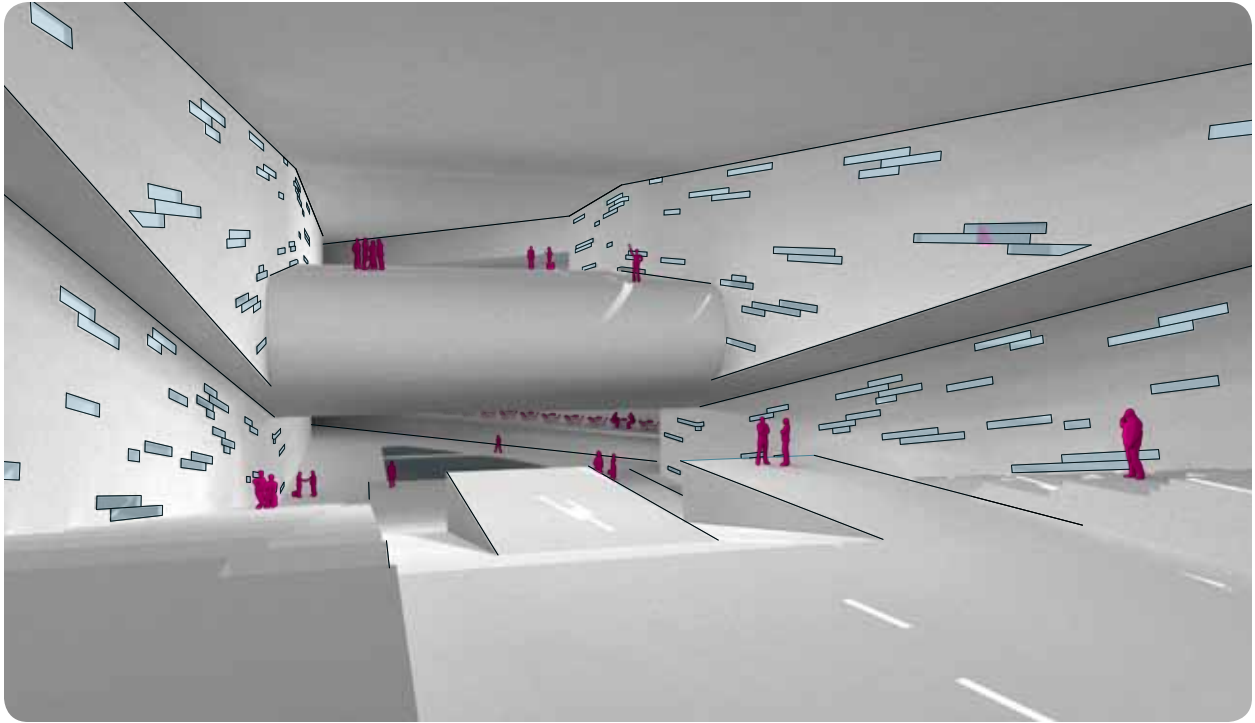
RENDERING ALONG MAIN STREET



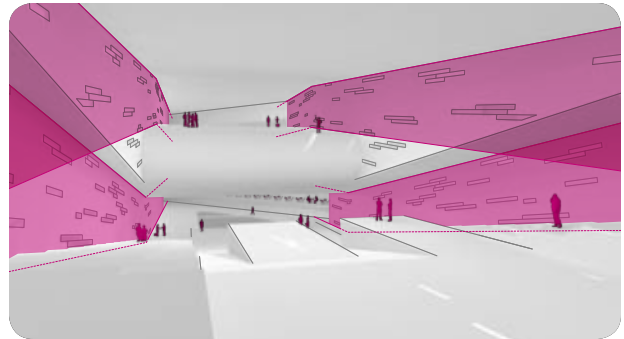
*left:* the perpendicular intersection of bands occurs at a large open space, situating this space in two perceptually distinct zones.

*right:* the geometry of the highlighted circulation/social surface continues across a break in the living center, resulting in a perceptual continuity that stands against a physical discontinuity.

RENDERING AT NORTH

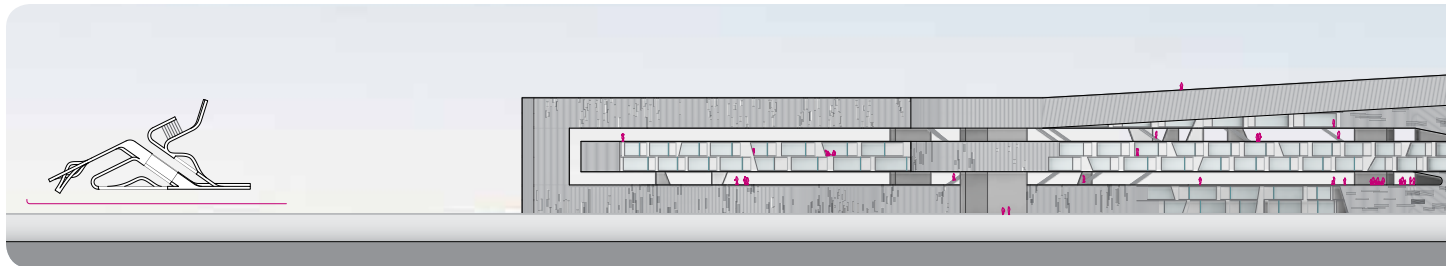
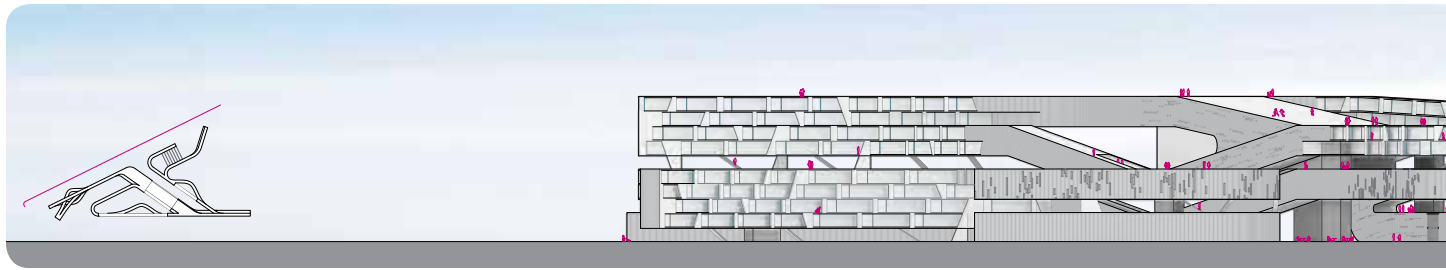


*left:* horizontal projections from the sloping ramp define human scale zones within the larger monumental space.



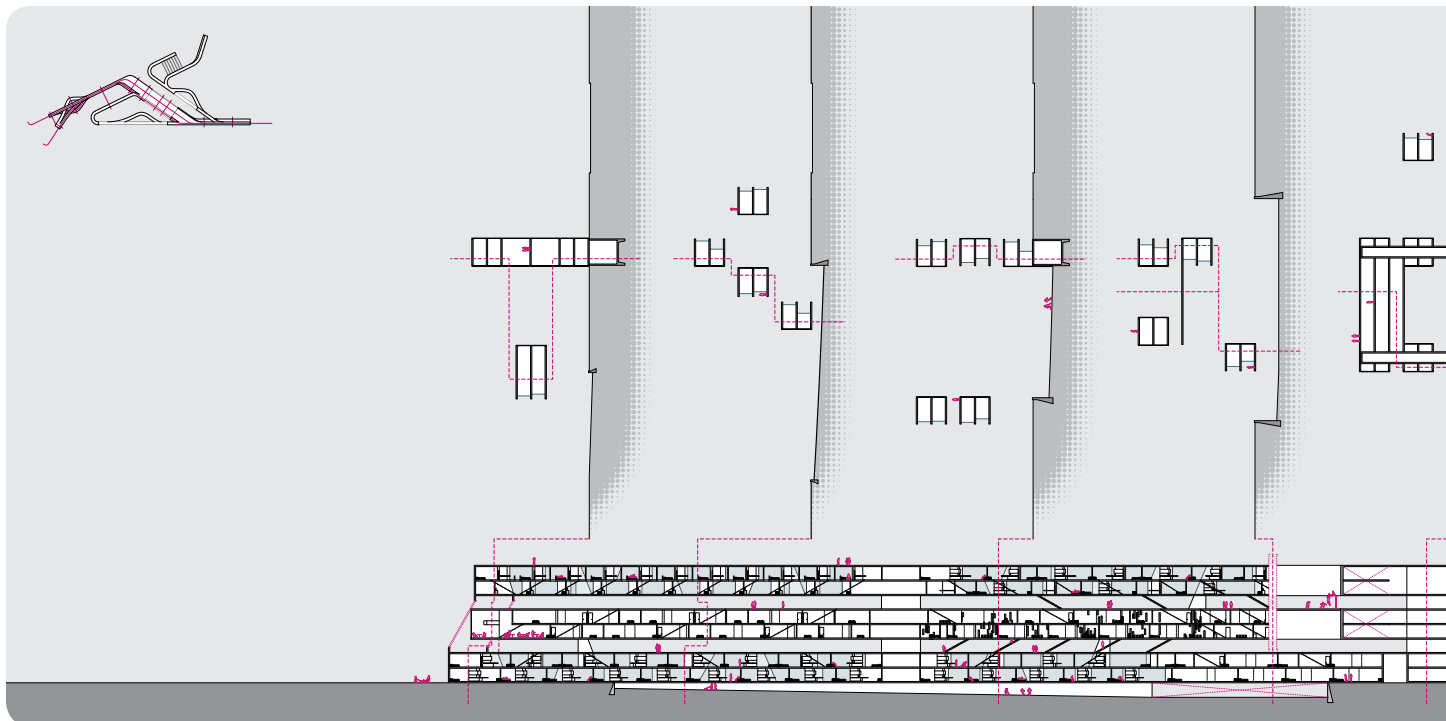
*right:* the common dimension of the bands is preserved, resulting in the legibility of the “figural” scale that exists beyond this space and relates to the living center’s overall geometry.

RENDERING INSIDE RECREATION CENTER



## elevations

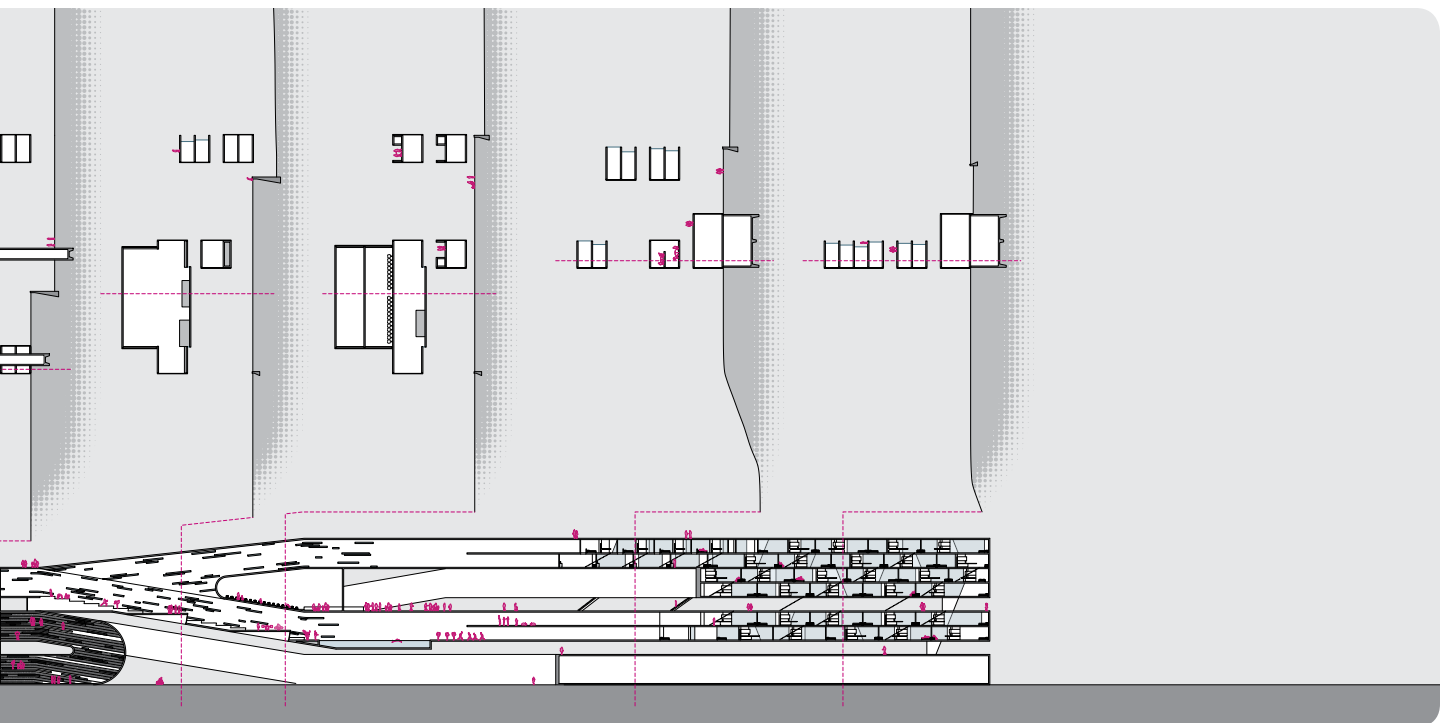
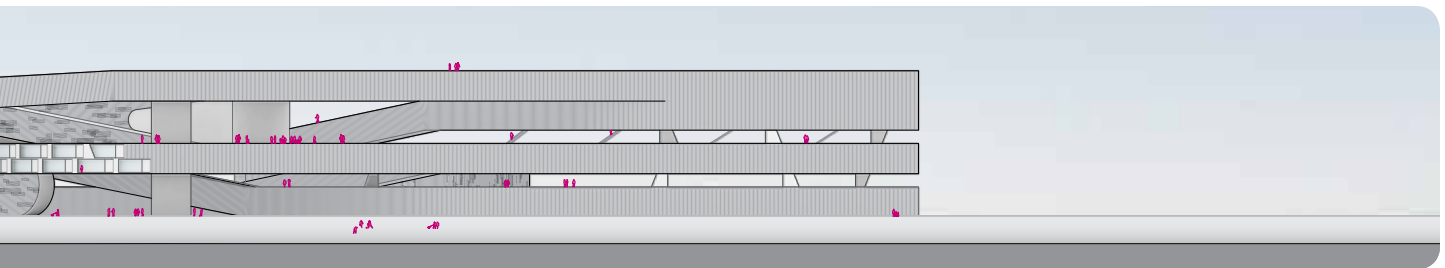
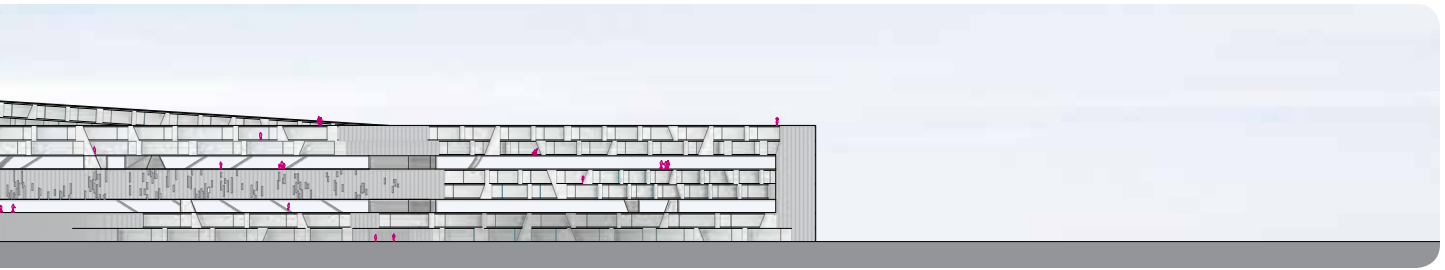
the common dimension of the band and the uniform tectonic treatment serve as the backdrop of social activity; here densities that are micro-community centers begin to emerge.



## longitudinal + transverse sections

despite the apparent evenness apparent in the serpentine longitudinal section, the series of transverse sections reveal how the sectional arrangement of bands defines areas with differing degrees of physical and perceptual boundedness.





SECTION AND ELEVATIONS





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